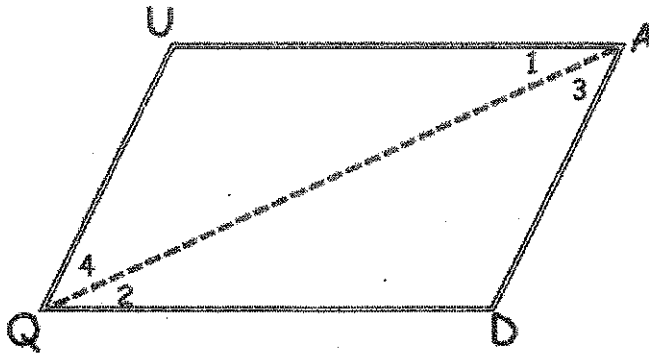


Given: QUAD is a parallelogram.

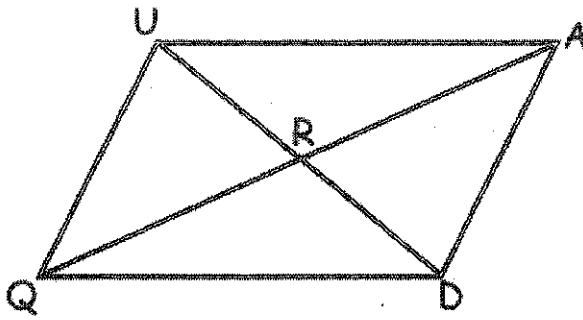
Prove: $\overline{QU} \cong \overline{AD}$; $\overline{UA} \cong \overline{DQ}$

1a



To prove you may use:

① opposite sides are parallel (def.)



Given: QUAD is a parallelogram

Prove: $\overline{UR} \cong \overline{DR}$, $\overline{QR} \cong \overline{AR}$

To prove you may use:

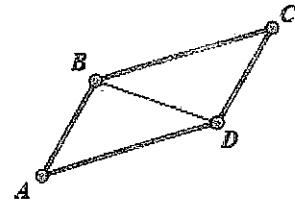
① opposite sides are
|| (def.)

② opposite sides \cong
(property we have proven)

1c

Given: Parallelogram ABCD

Prove: $\angle A \cong \angle C$, $\angle B \cong \angle D$



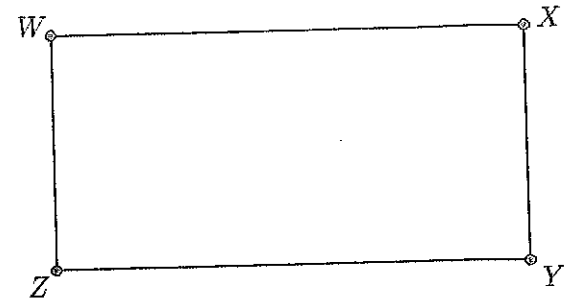
To prove you may use:

- ① Opposite sides are \parallel
(def.)

(Id.)

Given: Rectangle $WXYZ$

Prove: $\overline{WY} \cong \overline{XZ}$



To prove you may use:

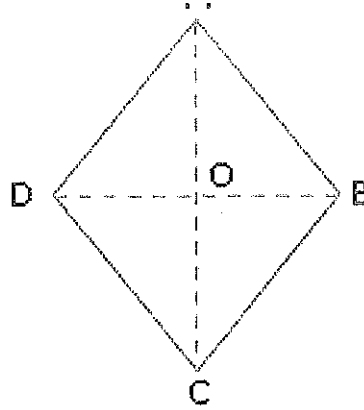
- ① All angles are right angles (def.)
- ② Opposite sides are \cong (prop. we have proven)

Feel free to draw in diagonals!

(1e)

Given: $ABCD$ rhombus

Prove: $\overline{AC} \perp \overline{BD}$



To prove you may use:

- ① A rhombus has 4 \cong sides (def.)
- ② A parallelogram has 2 sets of \parallel sides (def.)
- ③ Diagonals of a parallelogram bisect each other

With a partner:

2. Given: Quadrilateral AJSK; $\overline{AJ} \cong \overline{KS}$; $\overline{JS} \cong \overline{AK}$
Prove: AJSK is a parallelogram

You must show
that opposite sides
are parallel to
prove it is a
parallelogram (by
definition)!

Solo:

3. Given: Quadrilateral AJSK; \overline{AS} and \overline{JK} bisect each other
Prove: AJSK is a parallelogram

You must show
that opposite sides
are parallel to
prove it is a
parallelogram (by
definition)!



Name: _____

Date: _____

Per.: _____

4.5: Proving Quadrilaterals Are Parallelograms

Together:

1. Given: Quadrilateral AJSK; $\overline{AJ} \parallel \overline{KS}$; $\overline{AJ} \cong \overline{KS}$
Prove: AJSK is a parallelogram

You must show
that opposite sides
are parallel to
prove it is a
parallelogram (by
definition)!